Cahlen Brancheau   #154 HW7

13

a)

512_{10}

toBinary(512) = 10000000000_2

b)

$= 1023_{10}$

toBinary(1023) = 0000001111111111_2
2's Comp = 1111110000000001_2

c)

$-4,000,000_{10}$

toBinary(4,000,000) = $00000000001111010000100100000000$
2's Comp = $11111111110000101111011100000000$

14

a)

1111 1111 1111 1111 1111 1110 0000 1100 = 4294967296
2's Comp 0--   --- 0001 1111 0100 = -50

b 1111 1111 1111 1111 1111 1111 1111 1111 = 4294967295
0--   --- 01 = -1

C 0111 1111 1111 1111 1111 1111 1111 1111 =
1000 ---   ---01 = 2147483649

15

OX 7FFF FFFA

7   F   F   F   F   F   F   A

0111 1111 1111 1111 1111 1111 1111 1010 ✓

16

1100 1010 1111 1110 1111 1010 1100 1110

OX C   A   F   E   F   A   C   E ✓

17

I am assuming one of them must be right,
meaning they cannot both be wrong.

David is right.

30/6 = 5
toBinary(30) = 11110   4%2 = 0
both are wrong $30_{10} = (11110)_2$ & $42_{10} = (101010)_2$

18

1000 1111 1110 1111 1100 0000 0000 0000

a)   10000 0001 0000 0011 1111 1111 1111 = -269500415

b) 2414854144

c) I Type

OP	rs	rt	Imm Const d
100011	11111	01111	1100 0000 0000 0000

R Type

OP	rs	rt	rd	shift	funct
100011	11111	01111	11000	00000	000000

lw 15, -16384 (31)